



# AVIAN INFLUENZA (BIRD FLU)

## Avian Influenza: Current Situation

### Assessment of Current Situation

The avian influenza A (H5N1) epizootic (animal outbreak) in Asia and parts of Europe, the Near East, and Africa is not expected to diminish significantly in the short term. It is likely that H5N1 infection among birds has become endemic in certain areas and that human infections resulting from direct contact with infected poultry and/or wild birds will continue to occur. So far, the spread of H5N1 virus from person-to-person has been rare, limited and unsustainable. No evidence for genetic reassortment between human and avian influenza A virus genes has been found; however, this epizootic continues to pose an important public health threat.

There is little pre-existing natural immunity to H5N1 infection in the human population. If these H5N1 viruses gain the ability for efficient and sustained transmission among humans, an influenza pandemic could result, with potentially high rates of illness and death. In addition, genetic sequencing of influenza A (H5N1) viruses from human cases in Vietnam and Thailand shows resistance to the antiviral medications amantadine and rimantadine, two of the medications commonly used for treatment of influenza. This would leave two remaining antiviral medications (oseltamivir and zanamivir) that should still be effective against currently circulating strains of H5N1 virus. Efforts to produce vaccine candidates that would be effective against avian influenza A (H5N1) viruses are under way. However, it will likely require many months before such vaccines could be mass produced and made widely available.

Research suggests that currently circulating strains of H5N1 viruses are becoming more capable of causing disease (pathogenic) in animals than were earlier H5N1 viruses. One study found that ducks infected with H5N1 virus are now shedding more virus for longer periods without showing symptoms of illness. This finding has implications for the role of ducks in transmitting disease to other birds and possibly to humans as well. Additionally, other findings have documented H5N1 infection among pigs in China and H5N1 infection in felines (experimental infection in housecats in the Netherlands and isolation of H5N1 viruses in tigers and leopards in Thailand). In addition, in early March 2006, Germany reported H5N1 infection in a stone marten (a weasel-like mammal). The avian influenza A (H5N1) virus that emerged in Asia in 2003 continues to evolve and may adapt so that other mammals may be susceptible to infection as well.

### Notable findings of epidemiologic investigations of human H5N1 cases include:

- **Thailand, 2004:** An investigation concluded that probable human-to-human spread of influenza A (H5N1) had occurred in a family as a result of prolonged and very close contact between an ill child and her mother. Transmission did not continue beyond one person.
- **Vietnam, 2004:** While the majority of known human H5N1 cases have begun with respiratory symptoms, however, one atypical fatal case of encephalitis in a child in southern Vietnam was identified retrospectively as H5N1 influenza through testing of cerebrospinal fluid, fecal matter, and throat and serum samples. Further research is needed to ascertain the implications of such findings.
- **Vietnam, 2005:** Investigations suggest transmission of H5N1 viruses to at least two persons through consumption of uncooked duck blood.
- **Azerbaijan, 2006** (<http://www.who.int/wer/2006/wer8118.pdf>): Investigations revealed contact with H5N1-infected wild dead birds (swans) as the most plausible source of infection in several cases in children. The children were involved in removing feathers from the birds.
- **Indonesia, 2006:** WHO reported evidence of human-to-human spread. In this situation, 8 people in one family were infected. The first family member is thought to have become ill through contact with infected poultry. This person then infected six family members. One of those six people (a child) then infected another family member (his father). No further spread outside of the exposed family was documented or suspected.

### Human H5N1 Cases

Since January 2004, the World Health Organization (WHO) has reported human cases of avian influenza A (H5N1) in Asia, Africa, the Pacific, Europe, and the Near East. Cumulative number of confirmed human

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cases of avian influenza A/(H5N1) are available on the WHO Avian Influenza website ([http://www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/)).

## Animal H5N1 Cases

Since December 2003, avian influenza A (H5N1) infections in animals have been reported in Asia, Africa, the Pacific, Europe, and the Near East. View the update on avian influenza in animals ([http://www.oie.int/downld/AVIAN\\_INFLUENZA/A\\_AI-Asia.htm](http://www.oie.int/downld/AVIAN_INFLUENZA/A_AI-Asia.htm)) from the World Organization for Animal Health Web site.

## Bird Import Ban

There is currently a ban on the importation of birds and bird products from H5N1-affected countries. The regulation (<http://www.cdc.gov/flu/avian/outbreaks/embargo.htm>) states that no person may import or attempt to import any birds (Class Aves), whether dead or alive, or any products derived from birds (including hatching eggs), from the specified countries. For more information, see Embargo of Birds from Specified Countries (<http://www.cdc.gov/flu/avian/outbreaks/embargo.htm>).

## Travel

Updated Information for Travelers about Avian Influenza A(H5N1) ([http://www.cdc.gov/travel/other/avian\\_influenza\\_se\\_asia\\_2005.htm](http://www.cdc.gov/travel/other/avian_influenza_se_asia_2005.htm)) is available at the CDC Travelers' Health Web site. Also see Guidelines and Recommendations - Interim Guidance about Avian Influenza A (H5N1) for U.S. Citizens Living Abroad ([http://www.cdc.gov/travel/other/avian\\_flu\\_ig\\_americans\\_abroad\\_032405.htm](http://www.cdc.gov/travel/other/avian_flu_ig_americans_abroad_032405.htm)).

## CDC Response

CDC is working with WHO and other international partners to monitor the situation closely. In addition, CDC continues to work with WHO and the National Institutes of Health (NIH) on development of a vaccine for influenza A (H5N1). For more information view CDC's Response to Avian Influenza (<http://www.cdc.gov/flu/avian/outbreaks/cdcresponse.htm>).

## Background on the Current Outbreaks

Influenza A (H5N1) (<http://www.cdc.gov/flu/avian/gen-info/facts.htm>) is an influenza A virus subtype that occurs mainly in birds and is highly contagious among birds. Outbreaks of highly pathogenic H5N1 among poultry (<http://www.cdc.gov/flu/avian/outbreaks/current.htm#animals#animals>) and wild birds are ongoing in a number of countries. H5N1 does not usually infect people, however, a small number of human cases of H5N1 infection (<http://www.cdc.gov/flu/avian/outbreaks/current.htm#humans#humans>) have been reported in association with these outbreaks. Most of these cases have occurred from direct or close contact with infected poultry or contaminated surfaces. And while the H5N1 virus does not now infect people easily, infection in humans is very serious when it occurs; so far, about half of people reported infected have died. Rare cases of human-to-human spread of H5N1 virus may have occurred, but there is no evidence of transmission beyond one person.

Nonetheless, because all influenza viruses have the ability to change, scientists are concerned that H5N1 virus one day could be able to infect humans and spread easily from one person to another. Because these viruses do not commonly infect humans, there is little or no immune protection against them in the human population and an influenza pandemic (worldwide outbreak of disease) could begin. Experts from around the world are watching the H5N1 situation very closely and are preparing for the possibility that the virus may begin to spread more easily from person to person.

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**NOTE:** The World Health Organization (WHO) maintains situation updates ([http://www.who.int/csr/disease/avian\\_influenza/updates/en/index.html](http://www.who.int/csr/disease/avian_influenza/updates/en/index.html)) and cumulative reports of human cases of avian influenza A (H5N1) ([http://www.who.int/csr/disease/avian\\_influenza/country/en/index.html](http://www.who.int/csr/disease/avian_influenza/country/en/index.html)).

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For more information, visit <http://www.cdc.gov/flu/avian>,  
or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).